TO: Honorable Fred Upton Chairman
Honorable Henry Waxman Ranking Member
Committee on Energy and Commerce
US House of Representatives

FROM: Russell Bragg

DATE: April 29, 2013

RE: Stakeholder Response to RFS Mandate Changes

Thank you for this opportunity to present the impact of the RFS mandate to this distinguished committee. OK Industries, Inc is a fully integrated broiler producer spanning production through finished goods for retail, national restaurant chains, and regional food service providers. My name is Russell Bragg, Senior Vice President of Supply Chain. I have been with OK Industries for 25 years in various purchasing positions, but the grain commodities have always been part of my responsibilities. 13 years prior to that were with ConAgra and Pillsbury all within the throes of commodities.

When the mainstream was enthralled with alternative fuel production and global forces were creating instability in the global oil markets, in a midst of energy policy panic the Bush Administration created the Renewable Fuels Standard (RFS). At that time projectionists expected domestic gasoline demand to rise to 150 billion gallons in 2012 and 155 in 2013. Little did we know that with new engines, a national recession, massive unemployment, and general disarray in consumer markets, we would use only 89% of that projection last year, with 2013 now projected at a mere 80% or 124 billion gallons.

There will be several impacts created when this reduced consumer demand and increasing mandate come together. The first is the discussion of the “blend wall” and the correlating impact of RIN’s. 10% is the current blend ration, at that consumption ratio we will produce more ethanol than we have the capacity to blend. The second would be for us to go higher than the E10 common today to meet the higher consumption mandate and the significant impact on consumers, primarily higher pump price expenditures associated with a general decrease in MPG performance, as well as a significant impact on engines that run a myriad of other devices besides automobiles.

In an article titled “Study Shows RINs Not Factor in Higher Gasoline, Fuel Group Says”, by Mario Parker the author refers to a study compiled by Informa, which provides the following “A fact-based review of developments in the gasoline, ethanol and RIN markets indicates that the RFS in general and RINs in particular have not been a demonstrable factor in the rise in retail gasoline prices that has occurred in early 2013”. When the RIN market trades in the $.10 range the thought process is correct, but as RINs need to be bought by blenders due to a reduction in the overall fuel demand the

values of the RINs will increase dramatically as the sellers have an item that the buyer has to have. The futures markets intend to offer a RIN trading contract to facilitate some of this exchange. The general thought process is that the sellers will hold the RINs off the market, subsequently raising the value the blenders have to pay to meet the mandated requirements, and we all know that the blenders will pass those additional charges to the consumer as fast as possible, thus increasing the cost to us, the consumer. The ethanol industry advocates going to E15 to create additional consumption to avoid this downward trend. In addition this article says that "consumers are receiving just under a $.04 cent per gallon price benefit at the pump". At $.04 per gallon there are debates that say your MPG impact is reduced by more or less than that value, so for the point of debate let us just call it neutral (MPG negative impact =value at the pump price).

So at cost neutral to the automobile where are the negative impacts of the RFS policy? The Table below is derived from actual prices and actual quantities at our two mills in the Arkansas River Valley.

CORN			SOY		
YEAR	AMT REC'D (BU)	AVG. $	YEAR	AMT REC'D (TONS)	AVG. $
2009	22,169,226.61	$ 4.15	2009	195,198.66	$ 346.62
2010	26,224,335.64	$ 4.38	2010	247,725.18	$ 310.13
	Average Price	$ 4.27		Average Price	$ 328.38
2011	21,098,232.67	$ 7.09	2011	176,987.03	$ 356.76
2012	20,335,534.79	$ 7.26	2012	205,854.05	$ 431.67
2013	6,391,326.81	$ 8.03	2013	64,880.80	$ 466.13
	Average Price	$ 7.46		Average Price	$ 418.19
	Differential/BU	$ 3.20		Differential/TON	$ 89.81
	$ 152,801,176.19			$ 40,210,648.25	
		Total Impact of Short Crops		$ 193,011,824.44	

Production Year	Yield	Production	Ethanol Demand	Stocks to Use
2008	154	12092	3713	13.90%
2009	165	13092	4474	13.10%
2010	153	12447	4949	8.60%
2011	147	12360	4924	7.90%
2012	123	10780	4500	8.30%
Projected 2013	156	14000	4827	17.60%

In the two preceding tables you can instantly see the correlation between greatly reduced stocks to use ratios and the impact to a fully integrated broiler producer. The impact when a renewable crop no longer is renewable is about $193 million. A case in point (this data is mined from ProExporter Network), the general thought was for the 2013-2014 crop year was a greatly improved yield of 155 bushels per acre producing a 14 billion bushel crop greatly relieving the stress of the low carry outs we experienced over the last 3 years. However, Mother Nature has her own calling and as of today we have the lowest %planted in history of the corn crop. Today's estimate was that due to rain, cold, and flooding, we had only 8% of this year's crop planted futures moved limit up in trading on the day. The US Farmer is an amazing entity and can plant the crop at a dramatic rate and will plant all the way up to the limits of crop insurance. The challenge will be where the crop insurance window is the closest we are still a long way from entering the fields. So in essence our 14 Billion bushel crop is dwindling and we not even got to "hot and dry".

In essence our industry has had to come to the realization that ethanol and challenging energy policy are here to stay in some form or other, however we believe that there are methods which will keep the playing field level for all consumers of the US bounty. A prime example is how Brazil, the largest consumer and producer of ethanol in the world created solid energy policy by reducing the mandate in times of production limitations to create balance in the marketplace. This is a fine example of a prototype where the government realizes the impact of policy on the consumer marketplace and takes appropriate actions.

What we are asking the committee to consider is a process where all the factors in the impact to business and consumer are considered based on how well the renewable fuel source is renewed. There is a current Bill in the House to amend the Clean Air Act sponsored by Mr. Womack, Mr. Costa, and Mr. Welch. This Bill is trying to tie the production of the cash crop to the ability to consume the cash crop through a mandate.

As the first table indicated, there were prices that favored the producer in the first years of the mandate but as the mandate grew and production faltered the animal producing industries were wiped out with many bankruptcies, sales, and production curtailments, all of which impacted consumers at the market, and probably greater than the $.04 savings a the pump on a weekly basis. A simple process of tying the mandated volumes to the ending stocks at near the 10% to 11% level would limit the huge price swings seen in the last few years yet still provide returns to the US Farmer of sufficient return, while enhancing forms of energy security until renewable fuels can be thoroughly developed to be truly renewable.

Thank you for considering our viewpoint in your discussions.

Sincerely

Russell E. Bragg
SVP of Supply Chain

OK Foods, Inc.

POET | DSM
Advanced Biofuels

The Honorable Fred Upton
Chairman
Energy and Commerce Committee
U.S. House of Representatives
2125 Rayburn House Office Building
Washington, DC 20515

The Honorable Henry A. Waxman
Ranking Member
Energy and Commerce Committee
U.S. House of Representatives
2322A Rayburn House Office Building
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Submitted via email at: rfs@mail.house.gov

RE: POET-DSM Advanced Biofuels, LLC comments on the U.S. House of Representatives Committee on Energy and Commerce white paper on the Renewable Fuel Standard (RFS) and "Agricultural Sector Impacts"

POET-DSM Advanced Biofuels, LLC (hereinafter, "POET-DSM") is pleased to comment on the white paper on the RFS and "Agricultural Sector Impacts" the Energy and Commerce Committee released on April 18, 2013 (hereinafter, White Paper).[1] The White Paper is the second in a series of analyses by the Committee on the RFS.

About POET-DSM

"POET-DSM Advanced Biofuels is a 50/50 joint venture, created by POET, LLC ("POET"), based in Sioux Falls, South Dakota, and Royal DSM ("DSM"), based in the Netherlands. The joint venture is targeted to begin operation in early 2014 of its first commercial-scale cellulosic ethanol facility, located in Emmetsburg, Iowa, called Project LIBERTY." The capital expenditure by the joint venture in project LIBERTY amounts to approximately $250 million.

DSM is a global Life Sciences and Materials Sciences company. DSM has more than 140 years of experience in biotechnology development and a proven track record of scaling up industrial operations. With its integrated technology package the company is the industry technology leader in converting cellulosic biomass to ethanol using proprietary enzymes and yeasts.

[1] *See* "Renewable Fuel Standard Assessment White Paper: Agricultural Sector Impacts," available at http://energycommerce.house.gov/sites/republicans.energycommerce.house.gov/files/analysis/20130418RFSWhitePaper2.pdf.

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POET, the largest ethanol producer in the world, is a leader in biorefining through its efficient, vertically-integrated approach to production. The 25+ year-old company has an annual capacity of more than 1.6 billion gallons of ethanol from 27 production facilities nationwide. POET is also the world's largest producer by volume of distillers' dried grains with solubles (DDGS), a highly nutritious animal feed produced as a co-product of ethanol production. POET first began producing its trademarked Dakota Gold distillers' grains product in 1993. POET now produces more than 4.2 million tons of Dakota Gold per year and exports 800,000 tons a year to more than a dozen countries.[2] POET also owns and operates a pilot-scale cellulosic ethanol plant in Scotland, South Dakota, which uses corn stover as a feedstock.

The POET-DSM joint venture intends to extend cellulosic technology to the remaining 26 plants in the POET network. With this joint venture, POET and DSM expect to lead the industry in fulfilling one of the central goals of Congress when it created the RFS program: the large-scale development of cellulosic ethanol.

Preface

The RFS has begun to have its intended impact of increasing the use of domestically-produced renewable fuels. The RFS is also meeting Congress' goals for the standards of enhancing our nation's energy security, providing a much-needed source of rural employment, and reducing the emissions of greenhouse gases and other harmful pollutants from gasoline. These goals are manifested in the clear targets that Congress set for renewable fuels in the RFS, as well as the purposefully narrow RFS provisions for when targets can be waived or reduced. As currently structured (and if allowed to work *as-is*), the RFS will continue to provide the benefits that Congress desired when it strengthened the RFS requirements in 2007.

POET-DSM appreciates the opportunity to comment on this White Paper on Agricultural Sector Impacts. When the RFS is properly understood, it is clear that the RFS has provided significant net benefits to rural America. As the White Paper notes, there is "no question that the RFS has provided benefits for America's corn farmers by strengthening demand for corn." Furthermore, the White Paper also finds that most renewable fuel production facilities "are located in rural agricultural areas." In building the nation's largest ethanol production network, POET has pioneered a new business model using farmers, communities, and other stakeholders as the primary investors in ethanol plants, allowing ethanol production to give back even more to the communities and states where plants are located. Additionally, as stated above, POET is the world's largest producer by volume of DDGS, providing highly nutritious animal feed as a co-product of ethanol production.

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[2] For more information on POET, *see* http://www.poet.com.

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Discussion of specific questions

POET-DSM's subsequent comments focus on questions 3, 4, and 6-9 in the White Paper.

3. Was EPA correct to deny the 2012 waiver request? Are there any lessons that can be drawn from the waiver denial?

Yes, EPA was correct in denying the 2012 waiver request. Importantly, in recognizing the significance of the RFS, Congress carefully crafted the circumstances in which EPA can grant a waiver request. In particular, Clean Air Act § 211(o)(7)(A) limits the relevant waivers to those situations where "implementation of the [RFS] requirement would severely harm the economy or environment of a State, a region, or the United States." EPA *correctly found* that the RFS would not severely harm the economy or the environment of any state, region or the United States.

While agricultural commodity prices could be expected to be impacted by a severe drought as was experienced in 2012, the RFS itself was shown to have little if any impact on those prices (and thus the economy). Accordingly, EPA was correct in denying the waiver request.

Importantly, EPA denied the waiver because it generally found that "waiving the RFS requirements would not change the overall level of corn ethanol production or overall U.S. ethanol consumption in 2012/2013 because in the event of a waiver the market would demand more ethanol than the RFS would require."[3] Notably, EPA recognized the high-octane benefits of ethanol, as well as its clean attributes including low sulfur content and low aromatics (benzene) content.[4]

Additionally, EPA also appropriately recognized that an RFS waiver would reduce the production of distillers grains (a co-product when making ethanol), which would likely increase feed prices over what they would otherwise be.[5]

Significantly, EPA concluded that "it is unlikely that implementation of the RFS would cause *any* degree of harm to the economy."[6] EPA appropriately concluded:

> "Though EPA fully recognizes the harmful impact to the economy from the 2012 drought, the evidence before the agency does not support a finding that *implementation of the RFS* would likely or even probably cause harm

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[3] *See* EPA, *Notice of Decision Regarding Requests for a Waiver of the Renewable Fuel Standard*, 77 Fed. Reg. 70,752, 70,753 and 70,760 (November 27, 2012).
[4] *Id*. at 70,760.
[5] *Id*. at 70,770. A study by Cardno-ENTRIX found the same issue. *Id*. at 70,769.
[6] *Id*. at 70,775.

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to the economy over the 2012/2013 time period and certainly the evidence does not reach the generally high degree of confidence required for issuance of a waiver under section 211(o)(7)(A)."[7]

The key lesson to be learned from the 2012 drought is just how resilient the agricultural sector is, and just how little adverse impact the RFS itself had on agricultural commodity prices versus other market forces. Furthermore, increases in farm productivity and the development of cellulosic feedstocks (which can be designed to be drought resistant) should help to mitigate the impacts of future droughts. It is also worth noting that while the drought tightened domestic grain supplies significantly, global grain supplies remained adequate throughout the world.

Additionally, greater use of increased ethanol blends (including E15, mid-level ethanol blends such as E16-E50, and even higher level ethanol blends such as E85 used in flex-fuel vehicles) can provide for an effective means of meeting increased future RFS targets.

While much ethanol demand can continue to be driven by market forces (and the high octane, clean-burning attributes of ethanol), the RFS nevertheless provides an important, predictable, source of demand for ethanol and other biofuels in an otherwise monopolized fuel sector. Additionally, the RFS requires refiners and other incumbent interests that currently dominate the transportation fuel value chain blend domestically-produced and environmentally-friendly fuels into the nation's fuel supply. These RFS requirements are critical to incentivize the significant investment necessary for demonstrated, but nevertheless cutting-edge, technology such as cellulosic biofuels.

4. Does the Clean Air Act provide EPA sufficient flexibility to adequately address any effects that the RFS may have on corn price spikes?

Importantly, corn prices can "spike" for various reasons, independent of the RFS. Indeed, generally all types of commodity prices may spike, for reasons including financial speculation or otherwise. The important point is that, should the RFS itself ever be the cause of spikes that would severely harm the economy, the RFS provisions at Clean Air Act § 211(o)(7)(A) already provide the necessary statutory authority to address any such problems. *The RFS has been designed correctly, and no changes are required to the RFS.*

Furthermore, it should not be assumed EPA will fail to respond to a waiver request when needed. As an example of EPA action under the RFS, the agency can and has made use of provisions under CAA § 211(o)(7)(D) to reduce cellulosic biofuel targets when projected cellulosic biofuel production in an upcoming year is below the applicable RFS target. By

[7] *Id.* (emphasis in original)

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contrast, the 2012 waiver requests were denied by EPA because the petitioners provided no grounds—and no supporting facts were identified—that would justify EPA granting such waivers.

6. What role could cellulosic biofuels play in mitigating the potential effects of the RFS on corn prices?

Cellulosic biofuels are produced using feedstocks that have very little value in markets today, sources such as corn stover, wheat straw, energy grasses, wood, or municipal solid waste. These feedstocks can involve by-products of crops that may not otherwise be used (such as corn stover), or don't involve additional crop areas at all (such as wood or municipal solid waste), or are grown on lower-grade crop areas that may not be suitable for other types of production (such as energy grasses). Thus, cellulosic feedstocks should have no negative impacts on corn or other grain commodity prices.

As noted above, POET and DSM have entered into a $250 million joint venture to complete construction on one of the nation's first commercial-scale cellulosic ethanol facilities in late 2013. The joint venture intends to extend the technology to the remaining 26 plants in the POET network. Furthermore, EPA's recent proposed rule on the 2013 RFS requirements has described in detail the status of a number of upcoming cellulosic ethanol production facilities.[8]

To put the potential for cellulosic ethanol into perspective, a U.S. Department of Energy report has estimated more than one billion tons of biomass is available in America that could produce enough cellulosic ethanol to replace nearly a third of the country's gasoline use.[9]

It is critical to recognize that if the RFS target volumes are reduced (by an unwarranted Congressional intervention into the RFS as currently structured), this could have severe, adverse consequences on renewable fuel producers as well as the entire rural, agricultural community. Regulatory predictability (i.e. maintaining the RFS as-is) is essential to encourage continued investment in cellulosic and other advanced biofuels. As noted above, the RFS is critical to creating biofuels demand to incentivize the significant investment that must be made in cutting-edge technology such as cellulosic biofuels.

The critical role of existing, first-generation biofuels facilities in supporting cellulosic and other advanced biofuels also must be understood. Many biofuels producers rely on revenue streams from existing facilities to justify the investment in next-generation facilities. Furthermore, existing and advanced biofuels facilities can also have physical synergies. For

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[8] EPA, *Regulation of Fuels and Fuel Additives: 2013 Renewable Fuel Standards*, 78 Fed. Reg. 9,282 (February 7, 2013).

[9] Oak Ridge Nat'l Lab., *U.S. Department of Energy, U.S. Billion-Ton Update: Biomass Supply for a Bioenergy and Bioproducts Industry*, Aug. 2011, at xvii, xxi.

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example, POET-DSM can expand cellulosic production through a "bolt-on model" whereby a cellulosic facility is sited next to an existing grain-based facility, thereby making use of existing infrastructure, including electricity, water, railroad access, and biomass supply (e.g., corn stover from a similar footprint of farms that supplies corn to the pre-existing ethanol facility). This bolt-on model can provide for the rapid scale-up of cellulosic ethanol production, and is currently being utilized at the POET-DSM Emmetsburg, Iowa facility that is slated to begin production within a year. Maintaining the RFS *as-is* is necessary to ensure an adequate market to recognize the promise of cellulosic biofuels.

Finally, it should not be assumed that any particular change in corn prices is due to the RFS. As EPA has found, "the market price of corn is influenced by a variety of factors, including among other things macroeconomic factors like oil prices, international demand for coarse grains, crop production in different corn-growing countries, fertilizer costs, and weather conditions that affect crop production levels."[10] And, as noted above, generally all types of commodity prices may spike, for reasons including financial speculation or otherwise. Additionally, a key (over-stated) concern regarding the RFS and corn prices has been in relation to animal feed prices. DDGS, an important by-product of ethanol production, provides a highly-nutritious animal feed that helps to *reduce* feed prices.

7. What impact are cellulosic biofuels expected to have on rural economies as the production of such fuels ramps up?

Cellulosic biofuels are poised to create significant economic opportunities for rural economies not only through the production of renewable fuel but also through feedstock development.

POET-DSM's Project LIBERTY, under construction today and set to open in early 2014, will produce 20 million gallons of cellulosic biofuel annually, ramping up to 25 million gallons using crop residue (corn cobs, leaves, husk, some stalk). That one plant represents an initial investment of $250 million largely spent in the U.S. on construction and capital equipment. $150 million of that is a direct investment from the European company DSM, demonstrating the potential for bringing foreign dollars into the U.S. It also has the following economic impacts:

- 200+ construction jobs
- Dozens of direct jobs for plant operation
- Local tax revenue of more than $1 million annually during operation
- Nearly $4 million in direct, indirect and induced workers' earnings annually

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[10] *See* EPA, *Notice of Decision Regarding Requests for a Waiver of the Renewable Fuel Standard*, 77 Fed. Reg. at 70,771.

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- More than $24 billion (mid-range estimate) in total economic impact over a 20-year period for the state of Iowa[11]

Just using this one cellulosic feedstock – corn crop residue – these benefits could be quickly replicated by adding the technology to the more than 200 grain-based ethanol plants operating in the U.S. Beyond that, additional cellulosic feedstock can spark similar benefits in every state.

Presently at least six companies are building plants for cellulosic ethanol with a private investment of well over $1 billion. To meet the RFS targets for cellulosic biofuel, hundreds of facilities will be needed, which will represent a significant investment in the U.S. POET-DSM is working with banks, retirement funds and other investment vehicles globally to attract this capital to the US. Regulatory consistency is critical to attracting this money.

Of course, farmers are taking a critical role in cellulosic biofuel production, and as such they will be another prime beneficiary which in turn can provide added Federal revenues through income taxes and reduced farm subsidies to farmers.

POET-DSM's plant in Iowa will process 770 tons of biomass each day of operation. Farmers primarily within a 35-mile radius are contracting with POET-DSM to bale approximately one ton of biomass per acre, leaving the remaining three tons on the field for nutrient replacement and erosion control. This is a new revenue crop that comes without any significant planting considerations; it is already being grown.

Farmers contracting with POET-DSM are anticipating $12-$14 million dollars in new farm revenue annually for approximately 400-500 local farmers.[12] Early biomass harvesting activity has already prompted economic activity around Emmetsburg. A number of custom harvest operations have been created, often by young local residents eager for the opportunity to start a career in agriculture. Additionally, a new farm implement dealer, Woodford Equipment, opened near the construction site and is specifically serving farmers harvesting for Project LIBERTY. The broader development of cellulosic ethanol can be expected to bring billions of dollars of investment and income to farm communities.

8. Will the cellulosic biofuels provisions succeed in diversifying the RFS?

Yes. If the RFS is solidly supported by the Federal Government, diversification will be seen in the sources of feedstocks being used as well as the regions the biofuels are produced in.

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[11] *See* Impact DataSource, *Iowa Power Fund Economic Impact Study* (December 2010), prepared for the Iowa Office of Energy Independence and the Iowa Power Fund, available at http://www.energy.iowa.gov/files/PowerFundFullEconomicImpactAnalysis121610.pdf.

[12] *Id.*

Every state has biomass so every state will be able to experience the economic benefits of this emerging industry. Although the overall RFS targets continue to grow from now through 2022, almost all of the growth occurs in the mandates for "advanced biofuel," a portion of which is comprised of cellulosic biofuel. The ability to use corn ethanol to meet RFS requirements is essentially capped at 15 billion gallons per year.[13]

A recent EPA proposed rule noted that corn-ethanol production capacity in 2012 was 14.9 billion gallons.[14] Given that corn ethanol production is essentially at the maximum mandated level of the RFS, the RFS itself should not generally incentivize additional corn ethanol production. By the very structure of the current RFS, as cellulosic biofuels use increases, the RFS will diversify in terms of feedstocks used to generate renewable energy.

As this White Paper recognizes, "significant investments have been made in cellulosic biofuels production facilities." These investments are resulting in various commercial scale cellulosic ethanol production facilities coming on line, including the POET-DSM Emmetsburg facility. Thus, not only does the regulatory structure of the RFS itself result in greater feedstock diversification, but this diversification is happening *in practice* as well. Thus, the RFS should be left to work as-is, without restructuring biofuels targets.

9. What is the scale of the impact of the RFS on international agricultural production and global land use changes?

Many factors can influence world grain prices, including the price of oil, market speculation, weather, and the growing demand for meat worldwide. The impact of the RFS on world grain supply is often misstated. As the World Bank noted in a review of the 2008 commodity price spike, "... worldwide, biofuels account for only about 1.5 percent of the area under grains/oilseeds. This raises serious doubts about claims that biofuels account for a big shift in global demand."[15]

Nonetheless, International agricultural production has benefitted in recent years from a fair market price for grain due to a variety of factors, with previously idled cropland coming

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[13] By definition, an advanced biofuel cannot include ethanol derived from corn starch (referred to herein as "corn ethanol"). *See* CAA §211(o)(1). Thus, the "cap" on the use of corn ethanol to meet RFS requirements can be derived by subtracting the "Advanced biofuel" target in section 211(o)(2) from the total "Renewable fuel" target in that same section.

[14] EPA, *Regulation of Fuels and Fuel Additives: 2013 Renewable Fuel Standards*, 78 Fed. Reg. at 9,286.

[15] World Bank Development Prospects Group, *Placing the 2006/08 Commodity Price Boom into Perspective*, July 2010 available at http://www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/2010/07/21/000158349_20100721110120/Rendered/PDF/WPS5371.pdf.

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back into production and a strong incentive for international producers to invest in new technology and more efficient production techniques.

Consequentially, the United States' role among the four major corn exporting nations has fallen from 76.7% in 2005 to 28.1% last year. Meanwhile the other three countries – Argentina, Brazil and the Ukraine – have adopted larger roles in the export market.

This was possible thanks to increased corn production outside the U.S., and it is the natural result of fair market prices for agricultural commodities. For decades, U.S. crop support programs contributed to depressed corn prices below the cost of production. While U.S. farmers were able to survive thanks to government support, many foreign countries could not afford to supplement farm incomes. Farm land worldwide went idle, and the rest of the world became dependent on grain primarily from the U.S. According to Stanford University research, more than a billion acres of agricultural land has gone idle worldwide in the last century.[16]

With recent price improvements, previously idled land is coming back into production, allowing countries to become more self-sufficient.

For example, USDA data shows that corn production in Argentina increased 61% between 2005 and 2012 (from 622 million bushels in 2005 to more than 1 billion bushels last year). Brazil improved by 81% (from 1.6 billion bushels to 2.9 billion). The Ukraine improved corn production by 190% (from 282 million bushels to 824 million), and China increased its production 49% (from 5.5 billion bushels to 8.2 billion).

Given that ethanol production is not a primary driver of world grain prices, any role in "land use change" is questionable. Nonetheless, increasing corn acres in other parts of the world, for whatever reason, is not evidence of "land use change." It is the result of previous crop land coming back into production. It is clear that the new acres are not "low-yield" acres because as new corn production has increased, so have corn yields in these countries, according to USDA. Looking at the four major corn-producing countries noted above, shows yield increases.

- Argentina: 17%
- Brazil: 48%
- Ukraine: 11%
- China: 13%

This supports the fact that productive farm land is being used to increase corn supplies and that farmers around the world are now able to improve their farm practices to get more

[16] *See* Stanford University, *The Global Potential of Bioenergy on Abandoned Agriculture Lands* (May 2008), available at https://eng.ucmerced.edu/czo/files/public/elliott_campbell/Campbell-etal-Biofuels-EST-2008.pdf.

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grain from each acre. This does not qualify as land use change, because it is not a new use for the land.

The other aspect of land use change that is often wrongly attributed to biofuels is that of deforestation in the Amazon Rainforest. The truth is that deforestation rates in the Amazon have consistently fallen since the Renewable Fuel Standard came into effect, from 7,341 square miles annually in 2005 to 1,798 square miles last year. The 2012 rate represents the lowest deforestation rate since record-keeping began in 1980.[17]

Conclusion

In conclusion, the RFS has been a significant success and—left as it is—will provide even more of the economic, energy security, and environmental benefits that Congress intended to promote, *including significant benefits to the agricultural sector.*

POET-DSM would welcome the opportunity to further discuss these issues and solutions to the nation's transportation energy needs, and the significant benefits that the RFS has brought to the agricultural sector.

Sincerely,

Steve Hartig
General Manager
POET-DSM Advanced Biofuels
Licensing

James Moe
Chairman of the Board
POET-DSM Advanced Biofuels

[17] *See* National Institute of Space Research (INPE), available at Mongabay http://www.mongabay.com/brazil.html. http://www.mongabay.com/brazil-state_deforestation.html.

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April 29, 2013

Via Electronic Filing

Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC

ATTN: Ben Lieberman & Alexandra Teitz

Re: Request for Comment on Renewable Fuel Standard Agricultural Sector Impacts

Dear Sir or Madam:

Renewable Energy Group, Inc. (REG) appreciates the opportunity to present comments to the Committee on Energy and Commerce on "Agricultural Sector Impacts" of the Renewable Fuel Standard (RFS). RFS was expanded as part of the Energy Independence and Security Act of 2007 (EISA) (P.L. 110-140), which also created specific requirements for advanced biofuels, including biomass-based diesel. In so doing, Congress sought to further incentivize U.S. production and use of these fuels such as biodiesel. This policy has been an overwhelming success in the biodiesel sector, and has resulted in significant job creation and energy security benefits.

As the Nation's leading advanced biofuel producer, we have a strong interest in the continued success of the RFS. We support efforts to fully implement RFS program requirements. REG currently has more than 225 million gallons of annual biodiesel production capability at seven biorefineries and distribution capabilities at nineteen terminals across the country. We plan to build upon our leadership in the biodiesel industry and expand into the production of additional advanced biofuels. The experience REG has gained over the last 17 years in the biofuels industry uniquely qualifies us to share comments on the RFS with you.

The Committee solicited comment on nine topics and REG will weigh in on questions one and five, submitting our recently released white paper, Food THEN Fuel™: How the American Biodiesel Industry Is Strengthening Food Security, for consideration. It is also available at our website, www.regi.com.[1] In addition, as REG shares many of the concerns articulated by the National Biodiesel Board (NBB), we incorporate their comments by reference.

Specifically, the Committee requested comment on the following issues related to RFS food price impacts:

[1] Food THEN Fuel: How the American Biodiesel Industry Is Strengthening Food Security, REG®, http://www.regi.com/sites/default/files/pdf/Food%20THEN%20Fuel.%20Biodiesel%20Role%20in%20Strengthening%20Food%20Security.%20REG%20White%20Paper.%20with%20cover%20041613f.pdf (last visited Apr. 26, 2013).

1. What has been the impact of the RFS on corn prices in recent years? What has been the impact on soybean prices? Have other agricultural commodity prices also been affected?
5. What has been the impact, if any, of the RFS on food prices?

American biodiesel is important to our country's energy diversity and environmental goals. However, biodiesel also plays a vital role in strengthening food security and keeps grocery items, like meat, from increasing in price more than they already would due to inflation and petroleum energy costs.

Biodiesel has proven itself as an advanced biofuel and is an excellent example of how the Renewable Fuel Standard (RFS2) is working as it was intended. Yet, some biofuels critics would incorrectly have the public believe that biodiesel depletes the food supply, contributes to higher prices at the checkout counter, and is uneconomic. The facts our white paper details demonstrate those ideas to be wrong.

As our white paper will explain, biodiesel is employing a "food *THEN* fuel™" approach by supporting the nation's food supply chain in a number of important ways: giving farmers a market-based incentive to boost overall meat and grain production, adding economic value to the production cycle to help offset grocery price pressures over the long run, and supporting jobs and economic development, not only in the energy sector, but across a broad spectrum of industries. These are not potential benefits cast in the future tense, but rather real world outcomes of a productive alternative fuel industry that is working on a commercial scale for America today.

The biodiesel industry has demonstrated its capability and capacity to meet increasing biomass-based diesel targets beyond the 1.28 billion gallons called for in 2013. REG also looks forward to continuing to work with all stakeholders, public and private, as we move forward with RFS goals and requirements. Please don't hesitate to contact Anthony Hulen (Anthony.Hulen@REGI.com) or myself (Jonathan.Hackett@REGI.com) if you have any questions.

Sincerely,

Jonathan W. Hackett
Director, Federal Affairs & Policy
Renewable Energy Group, Inc.

Food THEN Fuel:
How the American Biodiesel Industry Is Strengthening Food Security

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www.REGI.com/FoodTHENFuel ***#BiodieselFoodTHENFuel***

Food *THEN* Fuel:
How the American Biodiesel Industry Is Strengthening Food Security

Executive Summary

American biodiesel is important to our country's energy diversity and environmental goals. However, biodiesel also plays a vital role in strengthening food security and keeps grocery items, like meat, from increasing in price more than they already would due to inflation and petroleum energy costs[1].

Biodiesel has proven itself as an advanced biofuel and is an excellent example of how the Renewable Fuel Standard (RFS2) is working as it was intended. Yet, some biofuels critics would incorrectly have the public believe that biodiesel depletes the food supply, contributes to higher prices at the checkout counter, and is uneconomic. The facts we will detail here will show those ideas to be wrong.

As this paper will explain, biodiesel is employing a "food *THEN* fuel" approach by supporting the nation's food supply chain in a number of important ways: giving farmers a market-based incentive to boost overall meat and grain production, adding economic value to the production cycle to help offset grocery price pressures over the long run, and supporting jobs and economic development, not only in the energy sector, but across a broad spectrum of industries. These are not potential benefits cast in the future tense, but rather real world outcomes of a productive alternative fuel industry that is working on a commercial scale for America today.

Why Biodiesel?

The American biodiesel industry has grown well beyond its humble origins to produce the most diverse fuel available today. Thanks to biorefinery upgrades and other major investments made by the industry's top producers over the years, biodiesel can be made from just about any fat, grease or vegetable oil – including waste products that in most cases are not suitable for human consumption. In 2012, American biodiesel was made from at least a dozen different raw materials, including inedible corn oil, used cooking oil, animal fats and soybean oil.

Biodiesel's energy source diversity is a remarkable achievement given that just two decades ago, the industry was confined to one raw material: soybean oil. In the early 1990s, increases in domestic soybean production left a huge glut of excess soybean oil sitting in tanks around the country. Rather than sell it for low-value uses, farmers reasoned that the oil could be refined to make biodiesel, an alternative fuel source that was being produced in large quantities in Europe using rapeseed (canola) oil[2].

[1] Food Dollar Series, US Department of Agriculture, ERS *http://www.ers.usda.gov/data-products/food-dollar-series/food-dollar-application.aspx*
[2] Charles W. Schmidt, "Biodiesel: Cultivating Alternative Fuels," Environ Health Perspective, Feb. 2007.

With petroleum prices skyrocketing as a result of the first Gulf War, soybean growers saw an opportunity not only to create value from an otherwise low-value byproduct in surplus, but to help the nation diversify its energy supplies. Over the ensuing years, soybean farmers banded together with scientists, first to demonstrate the feasibility of soybean oil-based biodiesel, and then deploy it in thousands of commercial settings.

Working Today for Land Efficiency and Economic Development

Farmland productivity has improved significantly over the last two decades and the burgeoning biodiesel industry has been a driving force behind those efficiencies. Improving land productivity and enhancing yields increases commodity supplies even as demand grows. In many cases this creates food reserves. In addition, the biodiesel industry[3] and public and private firms[4] continue to commit big dollars for investments in producing more food on fewer acres and *then* supplying more raw materials for biodiesel production.

When farmers are incentivized with higher profits by producing more meat and grain, they are empowered to maintain their land for sustainable agricultural production. This curbs competition from land development for building shopping malls and subdivisions, reducing grain production acres,[5] and decreasing our ability as a country to produce food.

The story behind biodiesel's growth in the United States is as much about private enterprise seizing a ripe opportunity as it is a logical outcome of the public's increasing desire for diverse energy sources that limit environmental impacts. Biodiesel easily meets the federal government's definition of an "advanced biofuel" in that each and every raw material it utilizes reduces lifecycle greenhouse gas emissions (GHG) by at least 50 percent, and in many cases up to 86 percent. In addition, biodiesel reduces carbon intensity by up to 96 percent[6] as compared to petroleum diesel.

Biodiesel's clean-burning attributes have helped it become an important asset in reducing the emissions profile of America's transportation sector, the second-biggest generator of U.S. GHG emissions behind electricity generation[7]. In fact, the American biodiesel industry has exceeded its federally required annual volume requirements since the Renewable Fuel Standard was enacted. In 2012, the biodiesel industry broke the 1 billion gallon mark for the second straight year. Biodiesel has delivered on these goals in the absence of any policy mechanism that would set a price on carbon.

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[3] Danforth Center Research on Biodiesel. *http://www.biodiesel.org/news/biodiesel-news/news-display/2013/02/05/biodiesel-goes-high-stake-with-ten-year-vision*

[4] Agricultural Research Funding in the Public and Private Sectors, USDA. *http://www.ers.usda.gov/data-products/agricultural-research-funding-in-the-public-and-private-sectors.aspx*

[5] American Farmland Trust *http://www.farmland.org/resources/fote/default.asp*

[6] California's Low Carbon Fuel Standard. Pathway for Inedible Corn Oil Biodiesel *http://www.arb.ca.gov/fuels/lcfs/lu_tables_11282012.pdf*

[7] US Dept. of Transportation, Center for Climate Change and Environmental Forecasting. http://climate.dot.gov/about/transportations-role/overview.html

As the industry has grown to meet and exceed the federal requirement, jobs have grown along with it. Biodiesel supports nearly 64,000 jobs around the country and provides more than $2.1 billion in household income[8].

Food *THEN* Fuel

Despite biodiesel's widespread economic and environmental benefits, it is still one of the most misunderstood advanced biofuels in the nation. Few people on the street could explain how biodiesel differs from other biofuels. This lack of understanding is not surprising given how far removed many Americans are from the agriculture producers and restaurant owners who have seen their businesses benefit from biodiesel's success.

At the same time, critics of biofuels have capitalized on this confusion by trying to convince the public that biodiesel is merely part of an amorphous group of energy sources that share the same alleged disadvantages. Indeed, they would have the public believe that biodiesel not only depletes the food supply by creating a competing use in fuel, but that it also contributes to higher prices at the grocery store.

In reality, biodiesel is playing a vital role in strengthening America's food security and reducing rising pressures on food prices. Rather than competing with food, biodiesel production applies a "food *THEN* fuel" approach by adding economic value for food industry byproducts and sending economic signals to the market to produce more. Biodiesel production helps make the food and agricultural sectors more profitable, incentivizes the production of protein and generally helps keeps grocery items, like meat, from increasing in price more than they already would due to inflation and petroleum energy costs.

Biodiesel's Protein Boost

The global population continues to demand more and more protein. Led by China, where demand for meat has quadrupled over the last three decades, growing wealth in developing countries is creating more demand for beef, pork and chicken than ever before[9].

Biodiesel is also supporting the production of soybeans. It is important to point out that soybeans are made up of approximately 80 percent meal and 20 percent oil. The more soybeans that are processed domestically, the more soybean meal, a major component of livestock feed, is produced.

With a larger supply of U.S. soybean meal, a 2011 study[10] found the prices paid by U.S. poultry, livestock and fish farmers decreased between $16 and $48 per ton. In short, without the biodiesel

[8] National Biodiesel Board economic impact study http://www.biodiesel.org/production/production-statistics
[9] US Department of Agriculture, ERS
http://www.ers.usda.gov/publications/err-economic-research-report/err32.aspx
[10] Centrec Consulting Group, LLC. December 2010 citing market years 2005-2009
http://www.unitedsoybean.org/media-center/biodiesel-returns-us-soybean-farmers-investment-by-the-billions/

industry, livestock producers would have paid $4.8 billion more in feed costs over a five year period[11].

The other direct benefit livestock producers obtain from biodiesel is new demand for animal fats such as poultry fat and beef tallow. In the past, these waste byproducts were confined to generally low-margin uses. Thanks to investments that have enabled biodiesel producers to add animal fats as a raw material, their share of production has risen significantly in recent years. In 2011 alone, biodiesel producers were able to use approximately 1.29 billion pounds of animal fats[12].

Increased demand from biodiesel companies has driven fat prices upward, creating an attractive alternative source of revenue for livestock and meat producers. In fact, an analysis examining the impact of biodiesel production on the value per head shows that cattle producers now earn up to an additional $16.79 per head when beef tallow is used in biodiesel production – or more than twice as much as they earned before from these byproducts[13]. In 2011, biodiesel demand for beef tallow is estimated to have added approximately $300 million to the U.S. beef cattle industry[14].

Because biodiesel production helps bolster farm profit margins, farmers and ranchers earn market-based incentives to boost their overall meat and grain production. This is basic economics: when farmers make more money, they produce more. When there is more meat or soybean meal supply available, it relieves rising pressures on food prices.

So rather than contribute to food scarcity, as critics claim all biofuels do, biodiesel enhances food security by spurring additional supplies. This is an important distinction, as positive food cycle contributors such as the biodiesel industry help America generate roughly 85 percent of its agricultural products here at home. With so little of the nation's food supplies brought in from abroad, America enjoys an enormous national security advantage.

Benefits to consumers

Biodiesel's advantages also translate to consumers' household finances. The margin relief livestock producers realize from lower feed costs and higher revenue acts as a restraint on consumer meat prices. This means that while plenty of other factors – such as petroleum prices – are contributing to price hikes in the grocery aisles, biodiesel production is not one of them. In fact, biodiesel is not only providing long-term relief for such price pressures – it is diversifying our nation's fuel mix at the same time.

[11] Centrec Consulting Group, LLC. December 2010 citing market years 2005-2009
[12] EIA 22M Biodiesel Production Survey.
[13] "Biodiesel Demand for Animal Fats and Tallow Generates an Additional Revenue Stream for the Livestock Industry" by Centrec Consulting Group, LLC for the National Biodiesel Board, Sept. 2012
[14] "Biodiesel Demand for Animal Fats and Tallow Generates an Additional Revenue Stream for the Livestock Industry" by Centrec Consulting Group, LLC for the National Biodiesel Board, Sept. 2012

Improving Restaurants' Bottom Lines

Much like livestock producers, the foodservice industry has benefited from increased biodiesel production since 2005[15] through lower costs and additional revenues. The key difference is that biodiesel has helped restaurant owners transform what was once a liability –used cooking oil—into an asset.

It was not so long ago that restaurants regularly had to pay companies to dispose of their used cooking oil (UCO) because the oil carried so little value it cost more to remove it. The economics of UCO changed almost overnight with the passage of the federal blenders tax credit for biodiesel that was originally enacted by Congress in 2005. By spurring demand for biodiesel, the law served to put a floor under UCO prices. In fact, from 2006 to 2011, the price of yellow grease (a combination of animal fats and used cooking oils) climbed from 11.5 cents to 42[16] cents per pound, and remains at about 36 cents a pound today.

With the exception of the fourth quarter of 2008, when the global recession pushed commodity prices down across the board, the value of yellow grease has been high enough to guarantee restaurants a value return on their UCO, in essence creating a new revenue stream. Not only that, but restaurants have been able to invest in closed-loop UCO recycling systems that help prevent employee injuries. This helps keep a lid on rising insurance costs and reduces occurrences of cooking oil being improperly disposed of down the drain savings cities millions of dollars in sewer maintenance costs.

Today, biodiesel is helping restaurants large and small realize more efficient operations while meeting their environmental and corporate responsibility goals. For instance, more than 8,675 McDonald's restaurants across the country participate in a cooking oil recycling program that takes advantage of a closed-loop UCO recycling system provided by Restaurant Technologies Inc. Each location recycles an average of 11,600 pounds per year[17]. McDonald's said the strategy has transformed UCO into a "business asset," and also credits the program for helping it eliminate significant amounts of plastic and corrugated packaging formerly used to deliver fresh cooking oil.

Benefits to consumers

Biodiesel's benefits to food service companies filter down to consumers by helping keep a lid on the prices they ultimately pay. Without the additional revenue realized today through UCO recycling, restaurants would be more likely to raise prices. Not only is this approach efficient –it is also sustainable. Restaurant chains now regularly receive their food supplies by trucks powered by biodiesel closing the loop on what has become a virtuous circle of environmental stewardship throughout their supply chain.

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[15] The Jacobsen, historical yellow grease price report. https://www.thejacobsen.com/Price-Guide-Commentary/Animal%20Fats%20and%20Oils.aspx

[16] The Jacobsen. Missouri River average historical yellow grease price report on April 10, 2013.

[17] McDonald's corporate website: http://www.aboutmcdonalds.com/mcd/sustainability/library/policies_programs/environmental_responsibility/biodiesel_and_recycling_cooking_oil.html

Conclusion

Living in one of the most prosperous countries in the world, it is sometimes easy to lose sight of what makes America so special. Food security may be one of our nation's greatest strategic advantages, but it is also one of its least discussed. In recent years, this lack of awareness has created inroads for critics of biofuels to blame federal policies for increases in food prices that stem from other market pressures.

In the case of biodiesel, the impacts of these supportive policies have been decidedly positive because biodiesel enters the food supply equation as food needs are met. Along each step of the way in the industry's growth, increases in biodiesel production have added value, whether it is to the economy in the form of jobs and income, or through lower costs and additional revenues realized by specific trades such as livestock farming and food service.

As America seeks ways to advance its environmental, energy diversity and food security goals in the future, the U.S. biodiesel industry has the scale and capability to contribute much more. Understanding biodiesel food *THEN* fuel approach in strengthening America's food security is the first step in ensuring this advanced and diverse biofuel is empowered to build on its success to date.

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Renewable Energy Group® is a leading North American biodiesel producer with a nationwide distribution and logistics system. Utilizing an integrated value chain model, Renewable Energy Group is focused on converting natural fats, oils and greases into advanced biofuels. With more than 225 million gallons of owned/operated annual production capacity at biorefineries across the country, REG is a proven biodiesel partner in the distillate marketplace.

For more than a decade, REG has been a reliable supplier of biodiesel which meets or exceeds ASTM quality specifications. We sell REG-9000® biodiesel to distributors so Americans can have cleaner burning fuels that help lessen our dependence on foreign oil. REG-9000® branded biodiesel is distributed in nearly every state in the U.S.

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RENEWABLE FUELS ASSOCIATION

April 29, 2013

The Honorable Fred Upton
Chairman
Committee on Energy and Commerce
U.S. House of Representatives

The Honorable Henry Waxman
Ranking Member
Committee on Energy and Commerce
U.S. House of Representatives

Dear Chairman Upton and Ranking Member Waxman:

The Renewable Fuels Association (RFA) is the national trade association representing the U.S. ethanol industry. The RFA appreciates the opportunity to respond to the questions posed in the second white paper, "Agricultural Sector Impacts," as part of the Committee's review of the Renewable Fuel Standard (RFS).

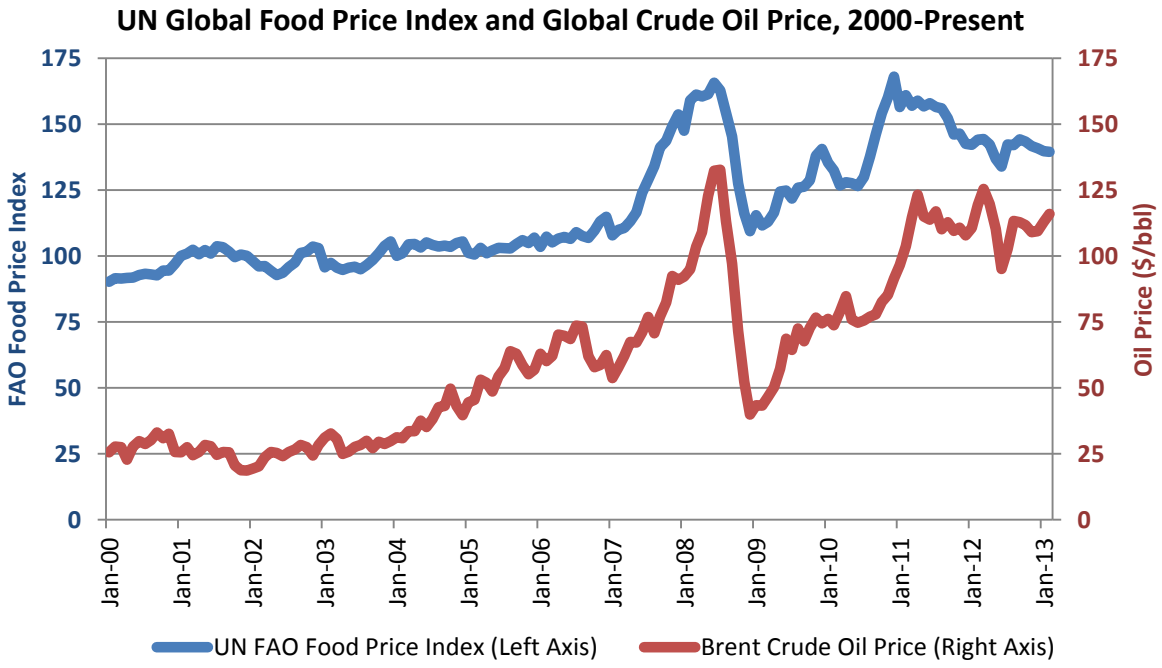
As an initial matter, it is important to remember that a central objective in developing a vibrant and robust ethanol industry was to increase demand for agricultural products and enhance farm income. Girded by the RFS, ethanol has become the single most important value-added market for American grain farmers, stimulating investment in agricultural technology and enhancing economic opportunities for rural communities across the country. The emergence of the ethanol industry over the past decade has served as an incredibly important economic catalyst, transforming the grain sector from a stagnating, surplus-driven marketplace to one that is vibrant, high-tech, and demand-driven. As a result, the net impacts of the RFS and ethanol production on the agriculture sector have been decidedly positive, and U.S. meat output and retail food prices have not been adversely affected.

At the outset, the Committee should consider that any analysis of the impacts of the RFS on the agricultural economy must carefully delineate between the effects of *market-based* ethanol expansion and the effects of the RFS policy itself. The RFS program's primary role has been to create the market certainty and stability necessary to facilitate increased investment in renewable fuels. Since the inception of the RFS in 2005, obligated parties have always blended more ethanol than required. In some years the amount of "discretionary blending" above and beyond RFS requirements has been several billion gallons. This demonstrates that economic factors other than the RFS have also been important drivers of growth in ethanol production. Thus, it is

imperative that the Committee clearly distinguish between economic impacts specifically wrought by the RFS itself and the impacts of the market-based expansion of ethanol production.

While market-driven demand for ethanol has been strong historically, the RFS is *absolutely essential* for stimulating future demand and driving investment in the next generation of feedstocks and biofuels. Without the RFS to drive future growth in renewable fuels, production and use of renewable fuels would stagnate or regress due to 1) the resistance of refiners to produce and sell gasoline blends with greater than 10% ethanol, and 2) abandonment of investments in advanced and cellulosic biofuels due to the lack of market certainty. As a result, consumers would be denied the additional economic and environmental benefits associated with greater ethanol use.

Moreover, while we understand the Committee is interested in specifically examining the impacts of the RFS, it is somewhat counterproductive to examine only the potential impacts of a single transportation energy option (i.e., renewable fuels) in isolation of other competing energy options (i.e., unconventional petroleum). That is, petroleum demand and prices also have important effects on U.S. agricultural and food markets. Every step of the food supply chain is reliant on petroleum products—from the use of diesel fuel in farm machinery, to the use of natural gas in food processing plants, to the use of plastics in food packaging, to the use of gasoline and diesel fuel to transport food to the grocery store or restaurant. The correlation coefficient between global food prices and global oil prices since 2000 has been 0.92, which indicates a near-perfect relationship (1.0 is a perfect correlation).We understand that the economic effects of petroleum dependence are outside of the scope of the Committee's current initiative, but biofuels should not be considered in a vacuum.



Below please find RFA's responses to questions set forth by the Committee on agriculture sector impacts.

1. **What has been the impact of the RFS on corn prices in recent years? What has been the impact on soybean prices? Have other agricultural commodity prices also been affected?**

It is beyond dispute that the emergence of the ethanol industry has positively impacted prices for corn and, to a lesser degree, other crops like wheat and soybeans. Indeed, adding value to farm products was a fundamental reason for developing the ethanol industry in the first place.

Stimulating demand and enhancing the value of local crops was a principal motivation for the tens of thousands of farmers and other rural Americans who invested in the development of ethanol plants in their communities. The RFS created an environment of certainty that gave those investors the assurance and confidence needed to finance the creation of a new American energy industry. However, this does not mean the RFS, by itself, has had a significant direct impact on prices for corn or other crops. A combination of economic factors outside of the RFS has also played a significant role in driving ethanol expansion. Further, market-driven ethanol expansion and the RFS are only two of *many* factors that have contributed to higher prices for agricultural commodities over the past decade.

In every one of the 10 years from 1997 to 2006, the typical corn farmer's cost of production was higher than his returns from selling the corn.[1] In other words, producing corn was a losing proposition in the decade leading up to enactment of the RFS. As a result, U.S. grain farmers became increasingly reliant on government payments as a major source of income. Due in part to the emergence of the ethanol industry, this dynamic has changed.

Net farm income hit a record $118 billion in 2011 and is forecast at $113 billion in 2012; these are the only two years in history in which net farm income has crested $100 billion. Gross crop sales hit a record $220 billion in 2012, while livestock receipts also hit a record level of $172 billion. Net farm income and livestock sales are projected to establish new records again in 2013.[2] Importantly, this revitalization of the American farm economy is having a positive impact on the Federal budget. Government payments to farmers were an estimated $8.59 billion in 2012, the lowest in 15 years. Total government payments in 2012 were less than half of the $20.2 billion spent in 2005—the year the RFS was adopted and the last year corn prices averaged $2 per bushel.[3] Crop payments that are triggered when market prices are below the cost of

[1] USDA-ERS (2013). *Commodity Costs and Returns.* Available at http://www.ers.usda.gov/data-products/commodity-costs-and-returns.aspx
[2] USDA-ERS (2013). *U.S. and State Farm Income and Wealth Statistics, Income statement for U.S. farm sector, 2009-2013F.* Available at http://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics.aspx.
[3] USDA-FSA (2013). *CCC Budget Essentials, FY 2013 CCC Table 35*. Available at http://www.fsa.usda.gov/FSA/webapp?area=about&subject=landing&topic=bap-bu-cc.

production (e.g., loan deficiency payments) have essentially been eliminated. As a consequence of the agriculture sector's economic resurgence, Congress is now considering sweeping changes to the Farm Bill that would further reduce the program's impact on taxpayers and the federal budget.

While the emergence of the ethanol industry has positively impacted corn prices, the magnitude of ethanol's effect compared to other factors influencing corn prices is often greatly overstated. Many in the livestock and poultry sectors have incorrectly assumed that 1) much or all of the growth in corn prices since 2006 is attributable to the RFS and ethanol, and 2) the impacts of ethanol expansion on corn price are entirely attributable to the RFS. Several independent economic analyses have exposed these notions as erroneous.

A recent economic modeling study commissioned by the International Centre for Trade and Sustainable Development (ICTSD) examined the impacts of ethanol policies, including the RFS, on crop prices in the 2005-2010 timeframe.[4] Using a sophisticated partial equilibrium economic model, the study found corn prices in 2009/10 *wouldn't have been any different at all* with or without the RFS in place. Corn prices would have been just 3.3 percent lower, on average, in the entire five-year study period without the RFS and ethanol blender's tax credit, the study found. The effect of the RFS and other ethanol-related policies on other crops is even less. If the RFS had not existed from 2005-2010, wheat prices would have been an average of just 1.6% lower, soybean prices would have been an average of 1.7% lower, and rice prices wouldn't have been any different at all. These results are explained by the fact that economic factors other than the RFS were primarily responsible for ethanol growth: "Higher crude oil prices would have increased the demand for biofuels and would have created strong market-driven investment incentives that would have resulted in a large expansion of the US ethanol industry even without the [RFS and tax credit]."

A related economic modeling study performed by the Center for Agricultural and Rural Development (CARD) at Iowa State University arrived at a similar conclusion.[5] This study examined the factors responsible for the increase in corn prices from 2006 to 2009, finding that only 8% of the total increase was due to the RFS and other ethanol policies. According to the authors, the RFS and blender's tax credit "…have played a minor role in determining the size of the corn ethanol industry. Thus, ethanol subsidies have contributed little to corn prices or to food price inflation."

[4] Babcock, B., for ICTSD (June 2011). *The Impact of US Biofuel Policies on Agricultural Price Levels and Volatility*. Issue Paper No. 35. Note: ICTSD is a Geneva-based non-governmental organization that has been financially supported by OXFAM, the World Health Organization, United Nations, the National Wildlife Federation, and other groups.

[5] Babcock, B., and Fabiosa, J. (April 2011). *The Impact of Ethanol and Ethanol Subsidies on Corn Prices: Revisiting History.* CARD Policy Brief 11-PB 5. Available at http://www.card.iastate.edu/policy_briefs/display.aspx?id=1155

In addition, several analyses examining the impact of the RFS on corn prices were conducted in 2012 in response to the request for a waiver of the 2013 RFS requirements. These analyses consistently demonstrated that the RFS was not a major influence on the corn market, and that waiving the RFS would not meaningfully reduce corn prices. A partial or full waiver of the RFS requirements for 2013 might have resulted in just a 0.5-7.4% reduction in average corn prices for the 2012/13 marketing year, according to most of the analyses. The most comprehensive analysis was conducted by the Food and Agriculture Policy Research Institute (FAPRI) at the University of Missouri. FAPRI estimated that a full waiver of the RFS renewable fuel requirements in 2012/13 might be expected to reduce corn prices by just 0.5%, or $0.04 per bushel.[6] The report found that a waiver might reduce corn use for ethanol by just 1.3 percent in 2012/13 and would only increase corn use for livestock feed by 0.6%, or 25 million bushels (this is roughly two days' worth of corn consumption by the livestock sector).

An analysis conducted by the University of Illinois at Urbana-Champaign and the U.N. Food and Agriculture Organization (FAO) found, "…the total implied support [from the RFS] to corn prices is in the range of $0.11 to $0.14 per bushel. This suggests we might see limited relief in corn prices (via a reduction in ethanol and corn demand) from a mandate waiver…"[7] Assuming average corn prices of $7 per bushel, an $0.11 to $0.14 per bushel impact would be the equivalent of a 1.6-2.0% reduction in corn prices.

Finally, the economic modeling analysis conducted by CARD in support of EPA's decision on the waiver request found, "…it is highly likely that the impact of waiving the RFS program is zero change in corn prices."[8] In the extreme, EPA's analysis concluded that a waiver of the RFS might reduce corn prices just $0.07 per bushel—equivalent to 1% of current corn prices.

2. How much has the RFS increased agricultural output? How many jobs has it created? Have any jobs been lost? What is the net impact on the agriculture sector?

The expansion of the ethanol industry has catalyzed substantial growth in the agriculture sector's output, efficiency, and value. The role of the RFS has been to create a certain and stable market environment for renewable fuels producers and feedstock providers. In turn, this certainty has enabled investment in new agricultural technologies, such as more efficient farm machinery and higher-yielding corn seed. As described above, agricultural gross domestic product (GDP), net farm income, livestock receipts, and crop receipts have all hit new record highs in recent years, indicating that the net impact of ethanol expansion on the agriculture sector has been resoundingly positive.

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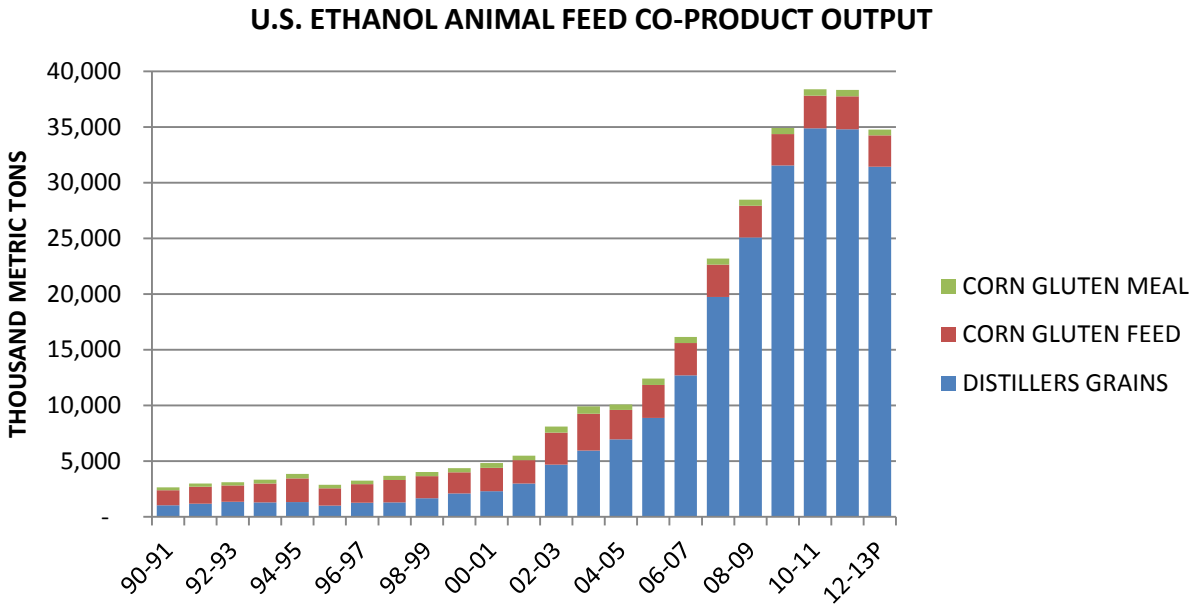
[6] Thompson, W., et al., Food and Agricultural Policy Research Institute (FAPRI), University of Missouri (Oct. 2012).*Renewable Fuel Standard Waiver Options during the Drought of 2012*. FAPRI-MU Report #11-12. Available at http://www.fapri.missouri.edu/outreach/publications/2012/FAPRI_MU_Report_11_12.pdf.

[7] Paulson, N., University of Illinois, and Meyer, S., U.N. FAO (Sep. 6, 2012). *RIN Values: What do they tell us about the impact of biofuel mandates?* farmdoc DAILY. Available at http://www.farmdocdaily.illinois.edu/2012/09/rin_values_what_do_they_tell_u.html.

[8] 77 Fed. Reg. 70,761

Increased Output of Animal Feed Co-products: Expansion of ethanol output has been accompanied by dramatic growth in the production of co-product animal feeds, such as distillers grains, corn gluten feed, corn gluten meal, and distillers corn oil. Any discussion of the ethanol industry's impact on agricultural markets must take the contribution of these valuable feed co-products into account. Every bushel of corn processed by an ethanol plant produces 2.8 gallons of ethanol and approximately 16-17 pounds of high-protein, high-energy animal feed. Accordingly, when animal feed co-products are appropriately considered, the U.S. livestock and poultry industry remains as the top user of corn and derivative products. *Livestock feed is projected to account for 53% of total corn demand in 2012/13, compared to 27% for ethanol*. The U.S. ethanol industry produced some 37-38 million metric tons of animal feed in 2012, including 33-34 million metric tons of distillers grains. According to a recent publication of the U.N. Food and Agriculture Organization (FAO):

> Because of the abundant supply, excellent feeding value, and low cost relative to maize and soybean meal, DG (distillers grains) has become the most popular alternative ingredient used in beef, dairy, swine and poultry diets in the United States and in over 50 countries worldwide. Dietary inclusion rates have been increasing in recent years because of the increasing price of maize and the high energy value DDGS provides to animal feeds at a lower cost.[9]



[9] U.N. Food & Agriculture Organization (2012). *Biofuel Co-products as Livestock Feed.* Makkar, H. (Ed.). Rome, Italy: FAO Press.

The dramatic growth in co-product availability has substantially blunted the impact of higher corn and soybean meal prices for livestock and poultry feeders. Biofuel co-products have only recently been appropriately incorporated into analyses of the ethanol industry's impacts on feed markets. After recently revising the Global Trade Analysis Project (GTAP) model's treatment of co-products, economists at Purdue University concluded, "In general, the livestock industries of the US and EU do not suffer significantly from biofuel mandates, because *they make use of the biofuel byproducts to eliminate the cost consequences of higher crop prices* (emphasis added)."[10]

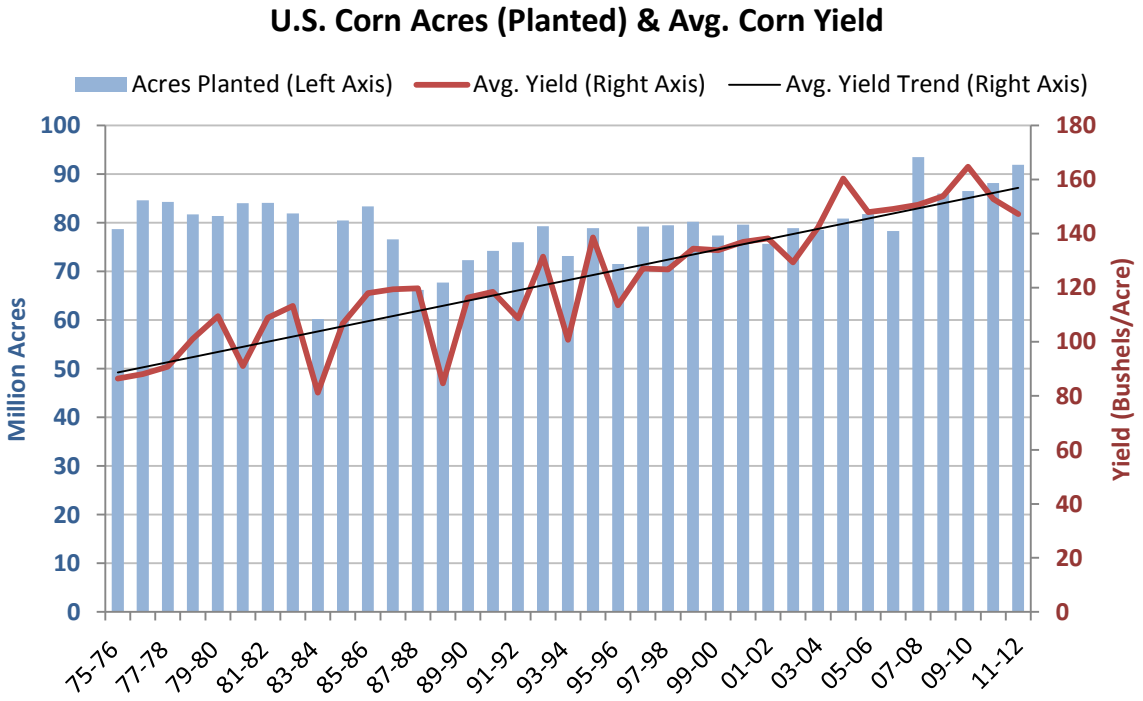
A recent analysis of the potential impacts of a waiver of the RFS on total net feed costs for beef and dairy cattle, hogs, broiler chickens, and laying hens in 2012/13 found that if a waiver *did* result in reduced output of ethanol and biodiesel, supplies of distillers grains and soybean meal would be reduced and their prices would rise. Thus, even with a slight reduction in corn prices, total net feed costs would actually *increase* for all species except for beef:

> …[W]hen viewed in the context of changes in the prices for other key feed ingredients such as distillers dried grains with solubles (DDGS) and soybean meal, the change in total net feed costs for livestock, dairy and poultry feeders would either increase slightly or decrease by a negligible amount if a waiver [of the RFS] was granted. This is due to the fact that if a waiver reduced biofuel output, it would also reduce the available supply of DDGS and soybean meal, which would naturally lead to higher prices for those key feed ingredients.[11]

Increased Corn Output: While the emergence of the ethanol industry has increased demand for corn, U.S. farmers have responded by growing significantly larger corn crops. U.S. corn production has increased tremendously in the "ethanol era." The average annual U.S. corn crop averaged 7.2 billion bushels (bbu.) in the 1980s, 8.6 bbu. in the 1990s, 10.3 bbu. in 2000-2006, and 12.3 bbu. since 2007 (the year EISA was enacted). As a result of larger annual corn harvests and the growing production of animal feed co-products, increased ethanol production has not affected availability of corn for traditional users. Corn supplies available for non-ethanol uses (i.e., the amount of corn and co-products "left over" after net consumption of corn by the ethanol industry) have been larger, on average, since passage of the RFS2 in 2007 than at any other time in history. Corn and corn co-products available for non-ethanol uses averaged 314 million tons (equivalent to 11.2 bbu.) from 2007/08 through 2011/12. This compares to an average of 308 million tons (11.0 bbu.) available for non-ethanol use from 2002/03 through 2006/07 and an average of 300 million tons (10.7 bbu.) from 1997/98 through 2001/02. In other words, the emergence of ethanol as a major source of corn demand has *not* reduced the supply of corn available for other uses, including livestock feed. It is important to note that expanded corn

[10] Taheripour, F., Hertel, T.W. & Tyner, W.E. (2010). *Biofuels and their by-products: global economic and environmental implications*. Biomass and Bioenergy, 34: 278–289.
[11] John M. Urbanchuk, Cardno-ENTRIX (Sep. 2012). *Impact of Waiving the Renewable Fuel Standard on Total Net Feed Costs.*

production has come primarily through increased productivity per unit of land (i.e., yield per acre). In 1980, farmers averaged a yield of 91 bushels of corn per acre and produced a crop of 6.6 bbu. In 2009, just a generation later, farmers produced an average yield of 164.7 bushels per acre and harvested 13.1 bbu. *This doubling in size of the American corn crop was achieved by planting just 3% more corn acres in 2009 than were planted in 1980.*



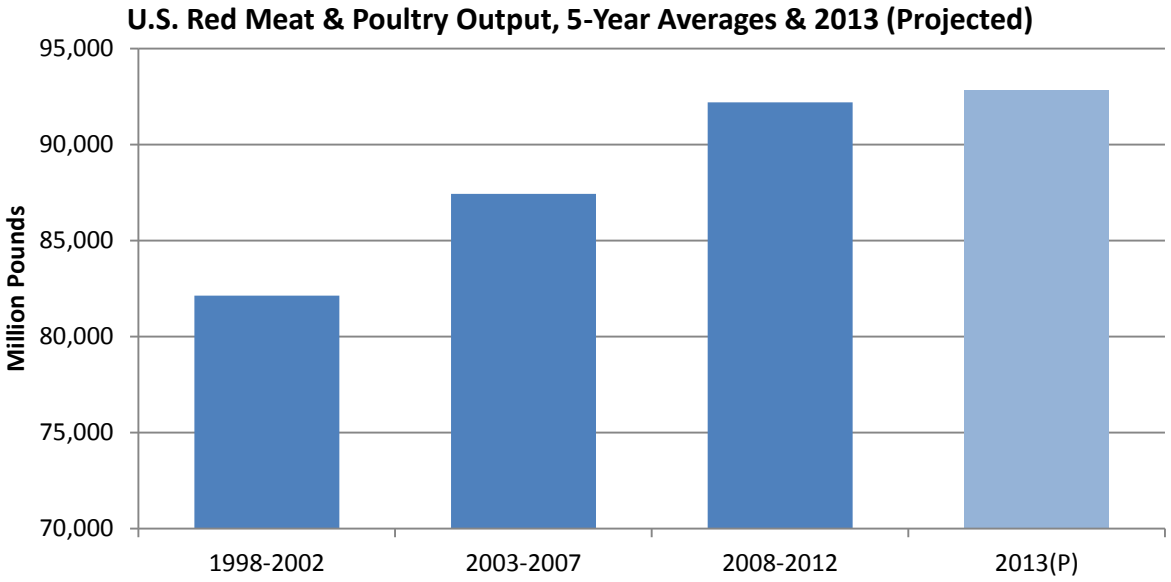
Source: USDA

Impact of Higher Price on Crop Productivity: Recent research shows that when farmers receive higher prices for corn, they re-invest more of their income in technologies that further enhance productivity.[12] Every 10% increase in corn prices translates to a 2.5% increase in average corn yields. For example, if corn prices increase from $5.50 to $6.60 per bushel (20%), yields would increase from 150 bushels per acre to 157.5 bushels per acre. This increase in output is driven entirely by the higher market price paid to the farmer.

Increased Meat Output: Meanwhile, contrary to claims that the RFS has "diverted" grain away from livestock and poultry production, U.S. meat output has grown steadily since the original RFS was enacted in 2005. In fact, 2013 production of red meat and poultry is projected to be the second-highest on record (only behind 2008) and 7% higher than output in 2005.[13] Steady growth in production of red meat and poultry show the fallacy of the notion that ethanol expansion and the RFS have somehow eroded U.S. meat output.

[12] Goodwin et al. (2012). *Is Yield Endogenous to Price? An Empirical Evaluation of Inter- and Intra-Seasonal Corn Yield Response.* Paper presented at Agricultural and Applied Economics Association 2012 Annual Meeting, August 12-14, 2012, Seattle, Washington. Available at: http://ageconsearch.umn.edu/handle/124884

[13] USDA (April 2013). World Agricultural Supply and Demand Estimates.



Source: USDA, WASDE (2013)

Job Creation and GDP Contribution: Expansion of the ethanol industry over the past decade has created and/or supported tens of thousands of jobs across all sectors of the economy. According to an analysis conducted by Cardno-ENTRIX (Attachment A), the production of 13.3 billion gallons of ethanol in 2012 directly employed 87,292 Americans. An additional 295,969 Americans found work in positions indirectly affiliated with or induced by ethanol production. These 383,260 total jobs helped create $30.2 billion in household income and contributed $43.4 billion to the national Gross Domestic Product (GDP). In addition, more than 200 ethanol plants in 26 states paid $7.9 billion in federal, state and local taxes.

Continued implementation of the RFS, as envisioned by Congress, will further add to the biofuel sector's positive impacts on the U.S. economy. New jobs associated with advanced and cellulosic biofuel production will add to the vibrant work force already created by today's grain ethanol industry. A study by Bio Economic Research Associates found direct job creation from advanced biofuels production could reach 94,000 by 2016 and 190,000 by 2022.[14] Total job creation from advanced biofuels, accounting for economic multiplier effects, could reach 383,000 in 2016 and 807,000 by 2022. Direct economic output from the advanced biofuels industry, including capital investment, research and development, technology royalties, processing operations, feedstock production and biofuels distribution, is estimated to rise to $17.4 billion in 2016 and $37 billion by 2022.

Further, a recent peer-reviewed and published economic modeling study (Attachment B) by the Department of Energy (DOE) indicates that "…the net global economic effects of the RFS2

[14] Bio Economic Research Associates (2009). *U.S. Economic Impact of Advanced Biofuels Production: Perspectives to 2030.*

policy are positive with an increase of 0.8% in U.S. gross domestic product (GDP) in 2022…"[15] (for context, 0.8% of current GDP is $121 billion). The positive impact on GDP stems largely from lower oil prices and reduced imports. According to the authors, "The economic benefits of conventional and advanced biofuels are primarily from their effects in reducing the imports and use of oil." Logically, about half of the economic benefits derive from the conventional biofuel requirements of the RFS2, with the remaining half coming from advanced biofuels.

3. Was EPA correct to deny the 2012 waiver request? Are there any lessons that can be drawn from the waiver denial?

Yes, EPA was correct to reject the waiver request. The historic drought of 2012—not the RFS—was the fundamental cause of the higher corn prices that affected all end users of corn (including ethanol producers). As stated by Purdue University economist Christopher Hurt at the height of drought, "Ethanol didn't cause the high prices we're seeing. ***The drought did***."[16] As further evidence that EPA made the correct decision, obligated parties had no trouble whatsoever complying with their RFS obligations for 2012. And even after turning in RINs to demonstrate compliance with the 2012 requirements, more than 2 billion surplus RINs remain available to aid refiners in meeting their 2013 RFS requirements.

EPA had no choice but to deny the waiver requests because the petitions entirely failed to show that the statutory requirements for granting a waiver had been satisfied. The petitioners did not, and could not, demonstrate that RFS implementation was the cause of the higher feed costs facing the livestock and poultry industries; instead, the waiver request letters explicitly recognized that the drought was the root cause of the increase in feed costs during the summer of 2012. Further, the waiver requests did not show that waiving the RFS would alleviate, in any way, the alleged harms to the states' livestock and poultry industries. In order to satisfy the requirements for granting a waiver, petitioners must show that suspending the RFS would redress the claimed harm. However, as discussed above, studies estimating the impact of an RFS waiver on corn prices (a difficult task given the complexity of commodity markets) showed that waiving the requirements in 2013 *might* reduce corn prices by just 0.5-7.4%. Even assuming such reductions would in fact occur in response to a waiver, corn prices would unquestionably remain well above pre-drought levels.

There are important lessons to be learned from the 2012 waiver request. First, the statutory criteria and process for considering a waiver request is both appropriate and effective. Given the goals of EPAct and EISA, Congress was highly specific in identifying the conditions that must be met in order for EPA to grant a waiver under CAA Section 211(o)(7)(A) and provided that even when those circumstances are met, EPA may still deny a waiver request. This high standard

[15] Oladosu, D., et al. (2012). *Global economic effects of U.S. biofuel policy and the potential contribution from advanced biofuels.* Biofuels 3:6, 703-723.
[16] Lucht, G. (Aug. 29, 2012). *Economists Study RFS Waiver*. Iowa Farmer Today. Available at http://www.iowafarmertoday.com/news/crop/economists-study-rfs-waiver/article_87507822-f20d-11e1-9ca3-001a4bcf887a.html.

was created to ensure that the market certainty and stability provided by the RFS could not easily be undermined by frequent or unnecessary waivers of the program's requirements.

Second, the RFS program's inherent flexibility allows actual ethanol production and use to respond rationally to market signals, and ensures the ethanol industry will participate in demand rationing in the event of a feedstock shortage. Congress recognized the need to build flexibility into the program that would minimize the economic impacts of variations and anomalies in the marketplace, while still allowing obligated parties to comply with the program's annual requirements. Because of the flexibility afforded by Renewable Identification Number (RIN) trading and banking provisions, the statutory RFS volumes do not create an absolutely inelastic source of corn demand. The flexibility enabled by the RIN market allowed ethanol production rates to respond immediately to sharply higher corn prices and tighter stocks. Indeed, according to a recent analysis conducted by economists at Purdue University, the reduction in ethanol output since early June 2012 "…shows that markets can and do adjust, with less corn being used for ethanol."[17]

4. Does the Clean Air Act provide EPA sufficient flexibility to adequately address any effects that the RFS may have on corn price spikes?

While it is obvious from earlier responses that we do not believe ethanol or the RFS are having a deleterious impact on corn prices, it is absolutely the case that the Clean Air Act's RFS includes numerous provisions providing flexibility to both obligated parties and the EPA that would mitigate any potential negative impacts on consumers. These provisions include:

- RIN Banking and Trading
- RIN Roll-Over Allowances
- Deficit Carry Forward Provisions
- Small Refiner Exemptions
- RIN Interchangeability
- Annual Renewable Volume Obligation (RVO) Adjustment
- Cellulosic Biofuel Waiver Provisions
- Advanced Biofuel Standard Adjustment
- Total RFS Adjustment
- Future Modification of Applicable RFS Volumes

Each of these provisions is described in detail in the attached RFA Issue Brief (Attachment C). In short, these measures are intended to 1) afford EPA the ability to administratively adjust RFS requirements on an annual basis in light of prevailing fuel market and economic conditions, and 2) provide obligated parties the ability to comply with annual RFS requirements in the event of a

[17] Tyner, W., Hurt, C., and Taheripour, F., Purdue University (Aug. 2012). *Potential Impacts of a Partial Waiver of the Ethanol Blending Rules.* Available at http://www.farmfoundation.org/news/articlefiles/1841-Purdue%20paper%20final.pdf.

shortage of renewable fuel or other market anomaly. Experience to date has clearly demonstrated that both the Agency and obligated parties exercise these provisions when necessary. The Agency, for example, has dramatically reduced the cellulosic requirement each year to date in recognition of the slow pace of commercialization. And obligated parties have made effective use of RIN banking and trading, and RIN roll-over allowances since the program's inception. We believe strongly these flexible provisions are all that are needed to effectively implement the Renewable Fuels Standard.

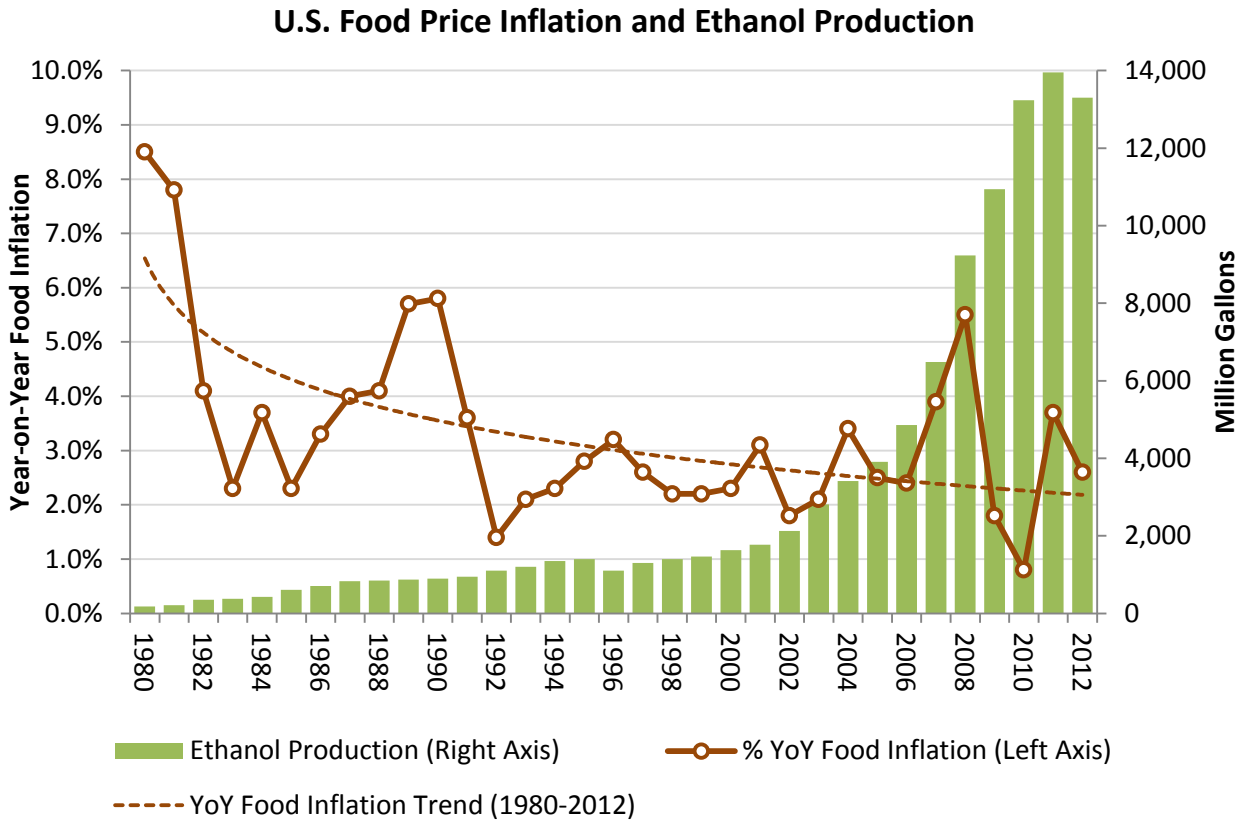
5. What has been the impact, if any, of the RFS on food prices?

There is no credible evidence whatsoever to support the notion that the RFS is adversely affecting consumer food prices. As explained above, the RFS itself has had little direct impact on agricultural commodity prices; and because the farm value of commodities represents such a small share of retail food prices, the impact of the RFS itself on food prices is indiscernible.

The ICTSD analysis referenced above found that retail prices for chicken *wouldn't have been any different at all* had the RFS not existed in the five years from 2005/06 to 2009/10. Similarly, retail beef and pork prices wouldn't have been any different at all without the RFS, with the exception of one year when prices for each would have been higher by $0.01 per pound. As explained by the author, "[t]he reason for such a small price impact is that feed prices make up a small share of retail prices and because the feed cost impacts from ethanol [policy] over this period are small."[18]

The negligible impact of the RFS on retail food prices is further underscored by recent economic modeling by FAPRI, which was also discussed above. The FAPRI work estimated that retail beef prices would be $5.30 per pound in 2012/13 *with or without* a full waiver of the RFS. Similarly, a waiver might result in retail pork prices being reduced by just $0.01 from $3.59 to $3.58 per pound, a 0.04 percent change.[19] Moreover, it is notable that annual food inflation rates have, on average, been *lower* since passage of the RFS than they were in the years preceding the program. Annual food inflation has averaged 2.90% since 2005, the year the original RFS was enacted. By comparison, annual food inflation rates averaged 3.02% in the 20 years prior to enactment of the RFS. Further, two of the lowest annual food inflation rates in the last 50 years have occurred since passage of RFS2 in 2007.

[18] Babcock, B., for ICTSD (June 2011). See footnote 4.
[19] Thompson, W., et al. (Oct. 2012). See footnote 6.



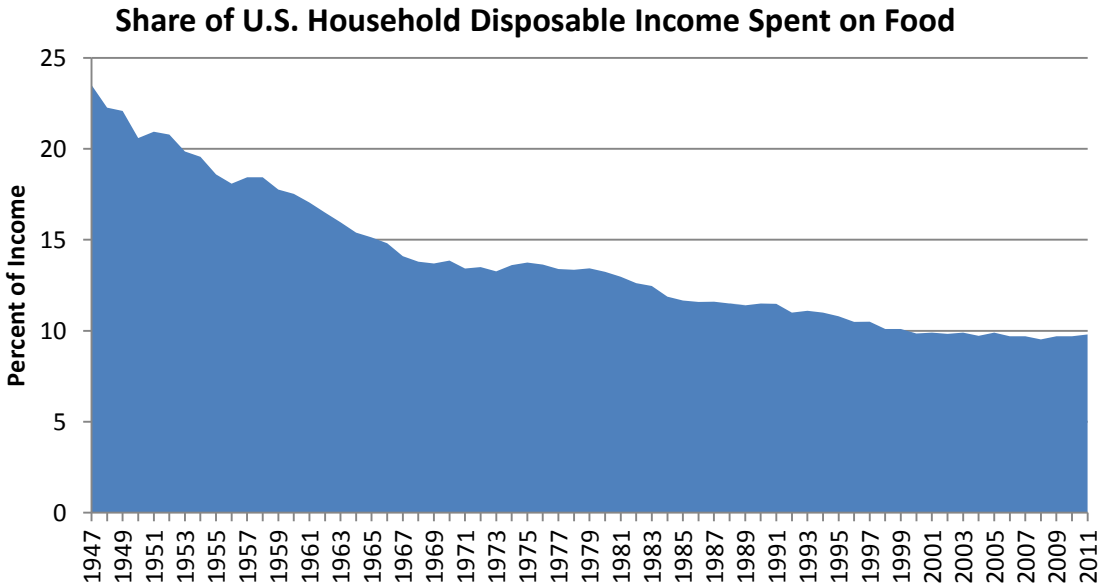
Source: Bureau of Labor Statistics, Energy Information Administration

The lack of any perceptible relationship between the RFS and retail food prices is further illustrated by the fact that the average American household spends less of its disposable income on food today than it did prior to existence of the ethanol industry and the RFS. Since enactment of the RFS2 in 2007, Americans have spent an average of just 9.7 percent of their income on food.[20] In the 10 years prior to adoption of the RFS2, spending on food accounted for 10.0 percent of disposable income. Further, the share of household income spent on food today is less than half of what it was in the early 1950s, and substantially less than the 1960s, 1970s, and 1980s. Spending on food, as a share of income, has trended down steadily since the 1940s and the emergence of ethanol and passage of the RFS have in no way interrupted this trend.

Some have argued that the RFS may disproportionately affect food prices in developing nations, where spending on food represents a much larger share of income. However, there is no indication that the RFS is having any negative impact on food prices in developing countries; and in fact, it could be argued that the emergence of ethanol as a global commodity is improving economic prospects for the rural poor in many developing nations. The DOE study referenced above also estimated impacts of the RFS on global food prices, finding that the policy has only negligible impacts. According to the study, "increases in food commodity prices under the RFS2

[20] USDA-ERS (2013). *Food Expenditures.* http://www.ers.usda.gov/data-products/food-expenditures.aspx

policy were less than 1% throughout the period from 2002 to 2030." Prices for livestock, poultry, and dairy products were shown to remain stable, or even decrease in some years, under the RFS2. Prices for coarse grains and oilseeds were shown to increase by less than 1% as a result of the RFS2.[21]



Source: USDA-ERS

Biofuels have already proven themselves as agents of economic development, environmental improvement, and social progress in many developed nations. We believe biofuels can bring the same benefits to developing nations without jeopardizing food security. In fact, biofuels have the potential to serve as an important tool in *reducing* food insecurity. As stated by the U.N. FAO, "…investment in bioenergy could spark much-needed investment in agricultural and transport infrastructure in rural areas and, by creating jobs and boosting household incomes, could alleviate poverty and food [in]security."[22] The FAO also found that: "Done properly and when appropriate, bioenergy development offers a chance to drive investment and jobs into areas that are literally starving for them."[23]

6. What role could cellulosic biofuels play in mitigating the potential effects of the RFS on corn prices?

Again, as noted several times in our responses, the RFA does not believe the RFS or increased ethanol production is having an unintended negative impact on corn prices. Nonetheless, as cellulosic biofuel feedstocks are most likely to come from agricultural and forestry residues such as corn stover and woody biomass, along with municipal and industrial waste streams, these

[21] Oladosu, D., et al. (2012). See footnote 15.
[22] See http://www.fao.org/news/story/en/item/74708/icode/
[23] Ibid.

fuels should allow us to grow our domestic energy resources without impacting corn supply or prices in any meaningful way. Indeed, to the extent the RFS and advanced biofuels are helping to further reduce global petroleum prices, their commercialization should have a beneficial impact on corn prices by helping to drive down fertilizer costs, diesel prices and other energy inputs that are increasing production costs for all of agriculture today.

7. What impact are cellulosic biofuels expected to have on rural economies as the production of such fuels ramps up?

As noted earlier, the U.S. ethanol industry is already having a significant impact on rural economies as a consequence of the RFS, and those benefits will grow exponentially as the industry continues to evolve and new technologies and new feedstocks are commercialized. The previously cited study by Bio Economic Research Associates[24] found the following benefits from advanced biofuels production:

- Direct Job creation: 94,000 by 2016 and 190,000 by 2022.
- Total job creation: 383,000 in 2016 and 807,000 by 2022.
- Direct economic output: $17.4 billion in 2016 and $37 billion by 2022.

In addition, the previously cited DOE study attributes about half of the economic benefits of the RFS2 to advanced biofuels.[25] This suggests that when fully implemented in 2022, cellulosic ethanol and other advanced biofuels will contribute better than $60 billion to U.S. GDP. It is important to note that while much of this benefit will indeed accrue to rural America where advanced biofuel feedstocks may be grown, the economic effects of these new technologies will also be felt in urban areas where municipal and industrial solid waste will provide feedstocks and where many of these technologies are being developed.

8. Will the cellulosic biofuels provision succeed in diversifying the RFS?

By definition, the cellulosic biofuels provisions of the RFS will succeed in diversifying feedstocks and fuels used in the program, greatly enhancing U.S. energy security in the process. Indeed, that was the intent of the RFS2 program. Congress intended the RFS2 to move the nation beyond oil, and beyond grain ethanol, so as to dramatically transform the nation's transportation energy markets by introducing the world's very first greenhouse gas emissions standard for liquid transportation fuels. By requiring cellulosic biofuels to meet a 60% reduction in carbon and other advanced biofuels to meet a 50% reduction in carbon, Congress sent a powerful signal to the marketplace to invest in these new technologies. While commercial development has not moved as quickly as anyone would like, the fact remains that significant investments have been made in cellulosic and other advanced biofuels and commercialization is imminent. That fact is one of the most important reasons for leaving the RFS2 provisions intact.

[24] Bio Economic Research Associates (2009). See footnote 14.
[25] Oladosu, D., et al. (2012). See footnote 15.

Congress should not be changing the rules in the middle of the game, jeopardizing investments made in good faith and based upon stable federal policy.

9. What is the scale of the impact of the RFS on international agricultural production and global land use changes?

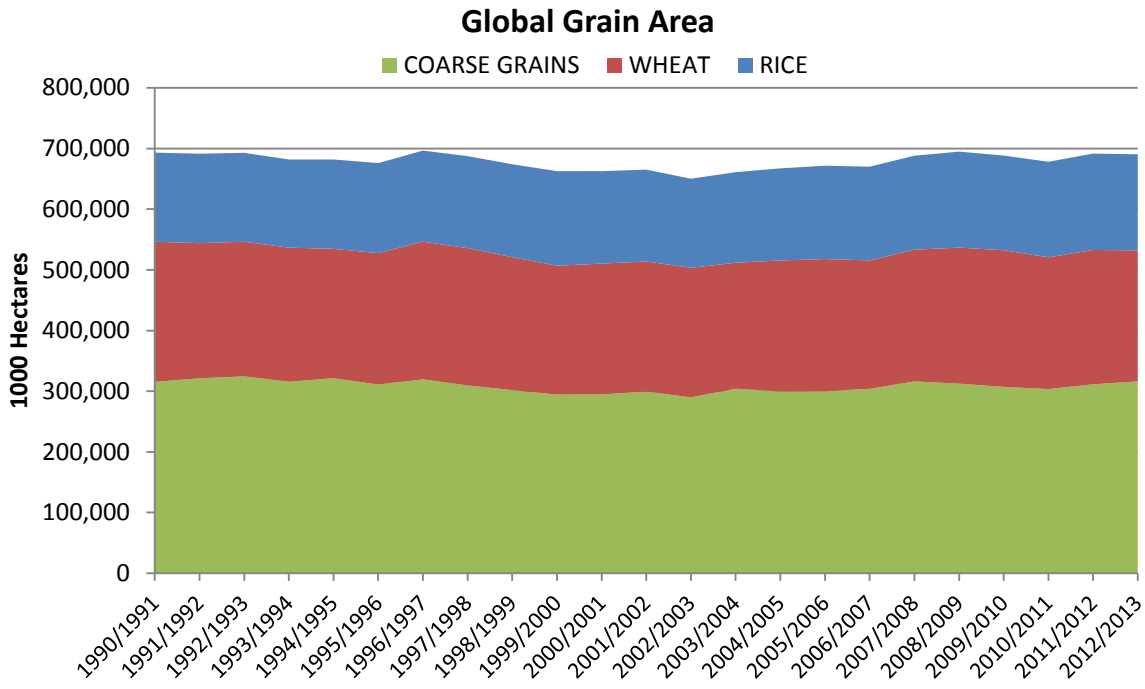
Just as U.S. farmers have reacted rationally to market signals, farmers around the world have also responded to increased demand for commodities by expanding output. However, the RFS and U.S. ethanol production are only minor factors influencing global agricultural production and land use. In response to a broad range of demand drivers, the world's farmers produced a record grain crop (coarse grains, wheat, and rice) of 2.32 billion metric tons in 2011/12. And despite the worst drought in the U.S. in some 50 years, 2012/13 world grain production is the second-largest ever, trailing only the 2011/12 record.[26]

The U.S. ethanol industry's impact on the global grain supply is trivial. On a net basis, the U.S. ethanol industry is projected to use just 2.90% of the 2.72 billion metric ton global grain supply (coarse grains, wheat, and rice) in 2012/13. This means 2.64 billion metric tons of grain and co-products will be available for non-ethanol uses—that is the second-largest amount of grain available for uses other than U.S. ethanol in history, trailing only 2011/12. Looked at another way, the amount of grain available globally today for non-ethanol uses (i.e., grain "left over" after net consumption by the U.S. ethanol industry) is larger than the entire global grain supply in any marketing year prior to 2009/10.

In terms of global land use, the RFS is an inconsequential factor. Studies by USDA and Informa Economics have found less than 1% of the world's major crop area is needed to produce 15 billion gallons of grain ethanol in 2015, as envisioned by the RFS2.[27] This figure is based on active cropland and does not account for the millions of acres worldwide of idle cropland and cropland-pasture that could be brought back into production. When all arable lands worldwide (as recorded by FAO) are considered, just 0.5% is needed to produce 15 billion gallons of grain ethanol by 2015.

Data collected by USDA show that global land use for grain production (coarse grains, wheat and rice) is actually lower today than it was throughout the early 1990s. Only rice—a food grain that is not used for ethanol production—has shown a sustained and steady increase in acreage since 1990. Meanwhile, wheat and coarse grains acreage has tended to fluctuate in response to global market conditions.

[26] USDA (April 2013). World Agricultural Supply and Demand Estimates.
[27] Malcolm, S. A., Aillery, M., and Weinberg, M (2009). *Ethanol and a Changing Agricultural Landscape*, Economic Research Report 86, U.S. Dept. of Agriculture, Economic Research Service.



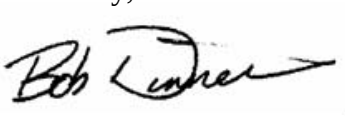
Source: USDA, PSD database

Finally, the recently published DOE economic analysis referenced earlier also examined the agricultural land use impacts of the RFS2, finding that the policy actually results in "…a slight [net] reduction in global land use for agriculture."[28] The modeling showed that any marginal increases in agricultural land use resulting from the RFS2 would be largely constrained to the U.S. and offset by decreases in land use in other regions. This result stands in stark contrast to previous modeling results suggesting the RFS2 would induce significant land use expansion outside of the U.S. The study shows U.S. agricultural land use would be just 0.4% higher (less than 2 million hectares) in 2015 than would be the case without the RFS2 in place. However, slightly expanded land use in the U.S. is more than offset by reductions in other regions by 2022.

* * * * *

Thank you again for the opportunity to comment. If there is any additional information you would like RFA to provide, please do not hesitate to ask.

Sincerely,



Bob Dinneen
President & CEO

[28] Oladosu, D., et al. (2012). See footnote 14.